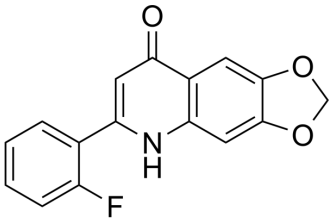
CHM-1

Cat. No.:	HY-103257
CAS No.:	154554-41-3
Molecular Formula:	$C_{16}H_{10}FNO_3$
Molecular Weight:	283.25
Target:	Microtubule/Tubulin
Pathway:	Cell Cycle/DNA Damage; Cytoskeleton
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 5 mg/mL (17.65 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.5305 mL	17.6523 mL	35.3045 mL
5 mM	0.7061 mL	3.5305 mL	7.0609 mL
10 mM	0.3530 mL	1.7652 mL	3.5305 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

CHM-1, a microtubule-destabilizing agent, inhibits tubulin polymerization. CHM-1 is a potent and selective antimitotic antitumor activity against human hepatocellular carcinoma. CHM-1 induces growth inhibition and apoptosis via G_2-M phase arrest in human hepatocellular carcinoma cells by activation of Cdc2 kinase activity[1][2][3].

IC_{50} & Target

IC50: 0.75 μM (HA22T)[1]

In Vitro

CHM-1 (0-100μM; 24 hours) induces significant concentration-dependent growth inhibition in HA22T, Hep3B, and HepG2 cells, with the most potent effects observed in HA22T cells (IC_{50} = 0.75 μM)[1].

CHM-1 (0-10 μM; 24 hours) significantly increases the binding of cyclin B1 to Cdc2 in HA22T cells[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	HA22T, Hep3B, and HepG2 cells

Concentration:	0-100 μM
Incubation Time:	24 hours
Result:	Induced G_2-M arrest of the cell cycle followed by apoptosis.

Western Blot Analysis[1]

Cell Line:	HA22T cells
Concentration:	0-10 μM
Incubation Time:	24 hours
Result:	Induced change in expressed and phosphorylated status of G_2-M regulators in human hepatocellular carcinoma cells.

In Vivo

CHM-1 (10 mg/kg; I.p.) induces a dose-dependent inhibition of HA22T tumor growth[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male severe combined immunodeficient mice (HA22T)[1]
Dosage:	10 mg/kg
Administration:	I.p.
Result:	Induced a dose-dependent inhibition of HA22T tumor growth.

REFERENCES

[1]. Wang SW, et al. CHM-1, a novel synthetic quinolone with potent and selective antimitotic antitumor activity against human hepatocellular carcinoma in vitro and in vivo. Mol Cancer Ther. 2008 Feb;7(2):350-60.

[2]. Liu CW, et al. CHM-1, a novel microtubule-destabilizing agent exhibits antitumor activity via inducing the expression of SIRT2 in human breast cancer cells. Chem Biol Interact. 2018 Jun 1;289:98-108.

[3]. Tsai AC, et al. CHM-1, a new vascular targeting agent, induces apoptosis of human umbilical vein endothelial cells via p53-mediated death receptor 5 up-regulation. J Biol Chem. 2010 Feb 19;285(8):5497-506.

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